

WHAT IS CLAIMED IS:

1. A foldable truss assembly comprising a plurality of wall members, the wall members having a first and second receiving member, each receiving member capable of receiving an attachment member of at least one foldable end cap, the foldable end cap comprising:

a plurality of adjacently connected elongated arm members, each arm member having a first and second end and an interface surface;

a plurality of hinge members, each hinge member being pivotally disposed between the first end of each arm member and the second end of an adjacent arm member, the arm members being connected by the hinge members forming a closed loop, the interface surfaces of each arm member facing the interface surface of the adjacent arm member, a folding plane being defined by the interface surfaces of the arm members;

a plurality of attachment members disposed at an intersection of the first end of each arm member and the second end of the adjacent arm member, the attachment members substantially perpendicular to the folding plane; and

a locking mechanism fixedly attachable between at least two arm members, the locking mechanism preventing relative rotation between an arm member and an adjacent arm member.

2. The truss assembly according to claim 1, wherein each of the arm members further comprise an outer surface opposite the interface surface and a first and second access void being disposed interiorly of the first and second ends and a portion of the attachment member being disposed within the access void.

3. The truss assembly according to claim 1, wherein each of the arm members further comprise a first and second pivot hole on the interface surface at the first and second ends, the hinge members disposed about a first pivot hole of a first arm member and a second pivot hole of an adjacent arm member.

4. The truss assembly according to claim 1, wherein the locking mechanism further comprises:

two elongated pivot bars each having a pivot end, a locking end and a pivot member at the pivot end, the pivot members of the pivot bars rotatably coupled to the end cap at diagonally opposite hinge members;

a locking member attachable to the locking ends of the pivot bars, the attached locking member preventing relative longitudinal displacement of the pivot bars; and

wherein the elongated pivot bars are rotatable about the pivot members, the pivot bars being rotatable so that the locking ends of the pivot bars are movable into relative proximity.

5. The truss assembly according to claim 1, wherein the hinge members further comprise a flat bushing between interface surfaces of adjacent arm members.

6. The truss assembly according to claim 1, wherein the attachment members protrude from a side of the end cap.

7. The truss assembly according to claim 1, wherein the attachment members protrude from two sides of the end cap.

8. The truss assembly according to claim 1, wherein the wall members comprise two elongated support members and a cross member fixedly connected between the support members.

9. The truss assembly according to claim 8, further comprising a cross bar removably attachable between one of the support members of one wall member and one of the support members of another wall member.

10. The truss assembly according to claim 1, wherein the at least one end cap comprises two end caps, the plurality of wall members having a first and second receiving member at opposing ends of the wall member, and the attachment members of the two end caps being received into the receiving members on opposing ends of the wall members.

11. A foldable truss assembly comprising a plurality of wall members having a first and second receiving member, each receiving member capable of receiving an attachment member of a foldable end cap, the foldable end cap comprising:

a plurality of adjacently connected elongated arm members, each arm member having a first and second end and an interface surface;

a plurality of attachment members, each attachment member pivotally disposed between the first end of each arm member and the second end of each adjacent arm member, the arm members being connected by the attachment members forming a closed loop, the interface surfaces of each arm member facing the interface surface of each adjacent arm member, a folding plane being defined by the interface surfaces of the arm members, the attachment members protruding from the end cap substantially perpendicular to an interface plane; and

a locking mechanism rotatably attached between diagonally disposed attachment members, the locking mechanism preventing relative rotation between an arm member and an adjacent arm member.

12. The truss assembly according to claim 11, wherein each of the arm members further comprise an outer surface opposite the interface surface and a first and second access void disposed on an interior of the first and second ends, a portion of the attachment member disposed within and extending from the access void.

13. The truss assembly according to claim 11, wherein each of the arm members further comprise a first and second pivot hole on the interface surface at the first and second ends, the attachment members passing through the first pivot hole of a first arm member and the second pivot hole of an adjacent arm member.

14. The truss assembly according to claim 11, wherein the locking mechanism further comprises:

two elongated pivot bars each having a pivot end, a locking end and a pivot member at the pivot end, the pivot members of the pivot bars being rotatably coupled to the end cap at diagonally opposite attachment members;

a locking member attachable to the locking ends of the pivot bars, the attached locking member preventing relative longitudinal displacement of the pivot bars; and

wherein the elongated pivot bars are rotatable about the pivot members, the pivot bars are rotatable so that the locking ends of the pivot bars are adjustable into relative proximity.

15. The truss assembly according to claim 11, wherein the attachment members further comprise a flat bushing between interface surfaces of adjacent arm members.

16. The truss assembly according to claim 11, wherein the attachment members protrude from two sides of the end cap.

17. The truss assembly according to claim 11, wherein the wall members comprise two elongated support members and a cross member fixedly connected between the support members.

18. The truss assembly according to claim 17, further comprising a cross beam removably attachable between a support member of a first wall member and a support member of a second wall member.

19. The truss assembly according to claim 11, wherein the at least one end cap comprises two end caps, the plurality of wall members each have a first and second receiving member at opposing ends of the wall member, and the two end caps are receivable into the receiving members on opposing ends of the wall members.

20. A method of assembling a foldable truss member, comprising:

unfolding an end cap, the end cap comprising a plurality of arm members having first and second ends, the arm members being adjacently connected forming a closed loop, the first end of each arm member being pivotally connected to the second end of each adjacent arm member, each arm member further comprising an attachment member at first and second ends;

attaching a plurality of wall members each having at least two receiving members to the end cap, the receiving members of the wall members connecting to at least two of the attachment members of the end cap;

pivoting a first and second pivot bar, each pivot bar having a locking end and pivotally coupled to the first end of one of the arm members, the pivoting of the pivot bars moving the locking ends of the pivot bars into relative proximity;

and

attaching a locking member to the proximate locking ends of the pivot bars to connect the pivot bars and prevent relative longitudinal motion of the pivot bars.

21. The method according to claim 20, further comprising attaching a cross beam between two of the wall members to stabilize the wall members.